The Air Line Pilot

August, 1953

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The Common Man Up in the Air

Ever Wonder What Changed Mr. Meek Back There Into A Lion-on-the-Loose Passenger? It's Anxiety Build-up That Makes the Air Traveler the Creature He Sometimes Is

By Howard G. Kurtz, Jr.

The ticket agent at an intermediate station has just broken the news to the passengers that their flight will be delayed indefinitely because of "mechanical trouble."

One passenger is "raising hell" with the ticket agent. He is bellowing at the top of his lungs. His face is red. The blood vessels stand out in his neck. He is threatening to have the airline employee fired, and to sue the airline for $100,000. He pushes rudely through the crowd of other passengers, without consideration. He barks angrily at the stewardess about his baggage. He snaps at his wife who tries to quiet him. He uses language which is offensive to the other passengers. He is a crude, irritable, "uncivilized" person.

But this is only a temporary situation.

Watching this same man at another time, perhaps even an hour later, it is difficult to recognize his personality. He is polite and soft-spoken. He is considerate of the other passengers. He thanks the employee for some bit of information which has been volunteered. He addresses his wife tenderly. He jokes with the porter carrying his bag. He is a polished, rational "civilized" person.

Why does this one man have two such radically different and contrasting personalities? What force changes him from a rational person to an irrational person?

Dual Personalities

Anxiety creates the force which brings about this change or retrogression.

Two different personalities are inherent within each individual human being. One is the rational personality controlled by the conscious mind, and guided by studied behavior patterns, voluntary beliefs, and conscious experience. The other, or irrational, personality is controlled by unconscious* instinctive anxiety. When anxiety is aroused this irrational and primitive or infantile personality becomes dominant. This irrational personality is not always hostile and aggressive. Sometimes it appears in negative patterns of retreat and over-passiveness and child-like helplessness, for whom others such as airline employees have to do the thinking and guiding as one would for a child.

The dynamics of this change from the rational to the irrational personality should be of immediate concern to every employee of every airline. I believe it should also be of interest to psychologists and psychiatrists and professional people who are probing for greater understanding of human behavior. Both parties might profit if the airlines were to arrange for top-level professional advisors from the fields of psychology and psychiatry.

Through aero-medical research, psychiatrists have explored the effects of unconscious anxiety in regard to assuring maximum safety and effectiveness of pilots. This new field might be merely an extension of professional concern into the passenger cabin.

Each airline employee bears some responsibility when a normally rational passenger is transformed, through mounting anxiety, into a tense, irritable and unreasonable, or unhappy but docile passenger, complaining that "I'll never ride that blankety blank airline again."

Anxiety Is Contagious

Anxiety is contagious. It can spread like ever-widening waves to other people, possibly damaging in a few moments a reputation built upon years of safe operation.

The contagiousness of anxiety may be seen, on an exaggerated scale, in a crowded subway car. A loud and frantic scream at one end of the car can spread anxiety, instantly, among all others in the car. The rest of the passengers are startled into a state of anxiety, without knowing why, or what the trouble is, or even whether there is any trouble.

The word "unconscious" is used here in its psychological meaning, which might be explained as "active but without awareness."

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Ed Modes, Editor

THE SPLIT PERSONALITY: He explodes in hostile aggressiveness . . . he retreats in childlike helplessness.

This paper deals with minute forces of anxiety, in comparison to such an example, but the factor of **contagion** is always present. After an anxious flight, a passenger can spread his anxiety among other people, to drive business away faster than a sales force can develop new business. Statistics seem to indicate that the industry has never fully overcome the public anxieties about flying in the winter time, for example.

This is a personal conclusion after more than twenty years spent in studying human behavior in a highly specialized "laboratory." Hundreds of thousands of subjects voluntarily have entered this "laboratory"for observation.

Before discussing further the control of anxiety over passenger reactions, perhaps it would be advisable to describe the "laboratory" in which these empirical experiments have been observed. Such observation is common to all airlines to varying degrees.

The "Laboratory"

The "laboratory" is a large metal tube constituting the cabin of a large transport airplane. "Subjects" (passengers) enter the tube voluntarily. After they are in, the outer door is closed and locked, preventing escape. The only other door leads to the men who will conduct the experiment, and who will be responsible for the safety, and even for the lives, of the subjects. This door also is locked so the subjects cannot reach the people who control their destinies. Then the metal tube is "hoisted" thousands of feet into the air, and hurled through space at hundreds of miles an hour.

In this experimental environment situations arise, occasionally, which arouse fear and anxiety among the subjects.

The objective of the "laboratory" experiment is 1) to study the incidents which occur to arouse fear and anxiety, and then 2) to observe the actions and reactions of the subjects being studied.

When a person is threatened, or believes he is threatened, two different types of action can be **observed.** (1) One type is the pattern of escaping from the threat (e.g. when confronted by a mad dog, to escape behind a door or barricade beyond the range of the threat; or, when startled by gun shots in the street, to escape beyond the range of the guns by ducking into a building or fleeing the area). (2) The other type is the pattern of approaching the source of the threat to attempt to control it and therefore eliminate the danger (e.g. to approach the mad dog and capture or control it; or to approach and shoot or overpower the man with the gun to eliminate the threat).

These are reactions of "fear" as the term is used herein. They are **observable** reactions.

In the empirical "laboratory" described in this paper, when such a sudden threat arose, the natural reactions of fear would be either 1) to escape through the door and leave the tube, to get beyond range of the danger, or 2) to approach the control room and take over control of the tube, to remove the threat by whatever means were available.

When incidents occur in flight such as to arouse fear patterns, these natural actions are thwarted and impossible to carry out. Escape is impossible when the flight is airborne. Control by the individual passenger is equally impossible, even if he could get to the flight deck. He would be incapable of controlling his own destiny, or that of his companions.

With these two instinctive patterns of action thwarted and frustrated, another force begins to generate.

This additional force is the dynamic force called "Anxiety" in this paper.

Anxiety as a Dynamic Force

If escape had been possible, the dynamic force that would have jerked a passenger out of his seat, under his own power, causing him to dash out

About the Author

After graduation from the U. S. Army Flying School, Kelly Field, in 1929, and after graduation as an Industrial Engineer from the Pennsylvania State College in 1930, Kurtz began his study of passenger and public reactions to air transportation. His direct concern with these reactions has been with several of the largest of the U. S. Flag airlines. He has held several junior executive positions, as District Sales Manager, as Station Operations Manager, as Supervisor of all stewardess and in-flight services, as manager of all reservations and ticket offices, as an officer in the Air Transport Command during the war, and more recently, as Assistant to the Vice President of one of the largest U. S. airlines. The Flight Safety Foundation asked Kurtz to crystalize some of his conclusions from this twenty-year study, in the hope that the air transport industry might obtain the benefits of maximum public appreciation of the safety records accomplished by the entire industry. This article is published through the courtesy of the Flight Safety Foundation.

the door, would have died down promptly, as soon as he was beyond the range of the possible danger. Similarly the dynamic force that would have caused him to rush to the flight deck, to control the situation if he were able, would die down as soon as the situation were under control.

But these avenues of action are not open. When the strong impulse either to escape or to control the situation is impossible, these dynamic forces do not die down.

Quite the reverse. They become increasingly dynamic.

Some inner self-generating force continues to rise. It appears that the conflict, itself, between the increasing urge to take normal fear-action, on the one hand, and the increasing self-discipline prohibiting any such attempted action, increases the generation of **anxiety.**

For practical purposes, the airline captain and purser or stewardess should realize that anxiety is a dynamic force which is **self-generated** within each passenger, frequently without any observable cause, and that this force is building up all during a flight . . . unless specific and professional actions are taken by the crew to reduce anxiety.

Anxiety Arises from Potential Danger . . . Not Actual Harm

This can be observed in an elementary example. A parent looks up from his reading, to notice that his two-year-old child has wandered to the middle of a normally busy street. Whatever conscious thought may have been running through the parent's mind, as he read, breaks off instantly! A new and powerful force takes control of his actions. His whole being is mobilized for the dash to the street to rescue the child. He is driven compulsively in his actions. He "thinks" about it afterwards.

The parent's anxiety-behavior was sparkled by the **potential** danger. It did not matter that there was no automobile on the road at that particular moment. The parent does not sit idly by until actual harm has come to the child. His anxiety is aroused by the **possibility.**

Anxiety continues to generate in the passenger in an airplane because of the mere **possibility** of danger, and the frustrated situation in which he would be incapable either of escaping or controlling any danger which might arise.

The safe operation of each flight is, of course, the paramount objective.

However, the mere addition of another statistic by another safe flight is only the beginning of the responsibilities of the captain and crew to the travelling public. They must realize that passenger anxiety builds up anyway, even on a completely safe flight. They must feel an additional responsibility to take knowing action to reduce anxiety at regular intervals and on specific occasions . . . much as one might feel a responsibility to drain off charges of static electricity which might be building up somewhere, unnoticed until it reaches a high potential, when it delivers a spark.

The captain, or the airline, neglecting this preventive work on passenger anxiety is allowing mounting anxiety to make the passengers tense, tired, irritable, hostile, critical, unhappy and unfriendly.

Anxiety Is an Unconscious Force

The captain or crew member who waits for a passenger complaint to warn him has already caused considerable damage to the reputation of his particular airline.

Anxiety is an **unconscious** force, until its extreme stages when it breaks into the conscious reverie of the passenger. The passenger is not aware of these welling anxieties within him, as a rule. When he does finally break out into a "rash" of hostility at some employee, the passenger, himself, is never aware of exactly why he did it, or what really started his anxiety to boil. The object of his hostility is almost always the innocent bystander. The passenger explodes at a minor flaw in the meal service, or an imagined slight in service, or a trifling delay in receiving his baggage. But these are not the real causes of his basic irritation.

If his anxiety had been kept to a minimum by all concerned along the way, these minor incidents would never have caused him to vent his hostility.

Although all employees play a part in keeping passenger anxiety at a minimum, the responsibilities of the captain are greatest of all. His function is directly related to orientation and anxiety-symbolism.

The Critical Role of Orientation

Back in the 1930's the writer was concerned with this problem, during a flight from New York to Chicago. The flight had been completely "uneventful" although we had been flying in the clouds all the way. The passengers had not seen the ground since take-off. The tenseness among the passengers could be sensed as it continued to mount. Increased muscle tension could be noted. Earlier relaxed conversations among passengers dwindled and became transformed into stony silence.

At that moment the captain took a blank piece of paper, and wrote a note on it. He had the stewardess pass the note back among the passengers. This simple note provided a new sense of orientation. The note stated that we had just passed over Detroit and mentioned the specific time. It gave the altitude at which we were flying. It stated that the sun was shining in Chicago, our destination, and that we would arrive there in approximately one hour and eleven minutes. It mentioned that the temperature outside the cabin was 5 degrees below zero, Fahrenheit, and that the temperature on the ground in Chicago was 34 degrees.

A distinct change was noted in each passenger as he read the note and passed it along. Tension was relieved. Informal conversation was resumed. Smiles appeared on faces which had been grim and stony. The complete change of atmosphere could be felt, although not easily described.

Orientation Relieves Anxiety

It is difficult to realize that this was an actual event, because the same scene has been repeated millions of times since, on all airlines. But this was a milestone.

That night at the office the writer drew up a new form. It was approved and printed within ten days. It was a form for each captain to fill out, containing blank spaces for the pertinent facts to provide orientation for the passengers. Its use by all captains, at regular intervals during flight, became part of the standard operating procedure of the airline.

The passenger reactions were emphatic. Stewardess reports continually reflected the enthusiasm with which passengers received this new orientation.

Within about sixty days, nearly every other airline in the country had adopted the practice . . . some going to press so quickly that they used our form, word for word.

Anxiety, Maybe

An air line pilot reports that his Company just received this angry note from a Japanese gent who lost some luggage enroute:

"Mr. Baggageman, United States of LAX. Gentlemen, Dear Sir: I dam seldom where suitcase are. She no fly. You no more fit to baggage master than for crying out loud. That all I hope. What the matter you?"

This was many years ago. The larger airplanes of today make it impracticable to pass a sheet of paper among the eighty or ninety passengers before the information is cold. This has led to the design of public address systems in modern airplanes for faster orientation.

But only a percentage of the captains seem to realize the importance of orientation to the extent of doing something about it.

Orientation is a basic need of human beings, when they are placed in unusual situations or environments where there is potential danger. When orientation is lacking, under these conditions, anxiety builds up and accumulates.

Orientation to Prevent Panic

The fully effective captain not only provides orientation for his passengers at regular intervals while en route, but provides prompt orientation to anything unusual which occurs in flight. He knows that a loud noise or backfire can cause anxiety to generate among his passengers, and he provides a prompt explanation to them. He knows that a sudden change of course or a sudden bank and turn will cause anxiety to build up among the passengers, until he gives them a prompt explanation of why it was necessary. He knows that sudden, unannounced bumpiness causes anxious thoughts to be projected into the passengers' minds . . . "is it a bad storm?" . . . "are we all right?" . . . "how long will it last?" . . . "is there any danger?", until the captain gives them the reassurance of an explanation.

The professional captain knows that **advance warning** is the most effective kind of orientation. If passangers look out of the window and see one of the propellers stopped, anxiety immediately wells up in them. On the other hand, when it is possible, an **advance warning** from the captain, that he is about to feather the propeller, can result in having his passengers watch the engine stop without any surge of anxiety or inner concern.

Orientation Essential from All Personnel

Orientation is not solely the responsibility of the captain.

Even the contemplation of a first flight can cause anxiety to intensify among some people. This anxiety is either accelerated or reduced by each employee with whom the passenger comes in contact.

Orientation by the reservations clerk is essential when the passenger is not accustomed to air travel. Techniques must be perfected for the reservations

THE IMAGINATION WORKS OVERTIME: Anxiety is an unconscious force until, in extreme stages, it breaks into conscious reverie.

personnel to learn whether their customer is accustomed to flying, or a novice. By not explaining to the new rider the services which will be available, by promising a mother a cradle for her baby when there is no cradle on board, by not assuring that all details of the flight are clearly in the passenger's mind, the reservations clerk is setting the fuse for an explosion of anxiety and that helpless feeling of loss of orientation, for the passenger.

Anxieties multiply into a growing feeling of helplessness for the new passenger when he or she deplanes at an intermediate station. This loss of orientation is compounded if the strange passenger finds himself or herself in a foreign country. "I can't read the signs in the foreign language!" . . . "how long will we be here!" . . . "might I miss the plane when it leaves!" . . . "where are the rest rooms?" . . . "should I try to eat here on the ground, or do they feed us after we take off again?" . . . "is my money good here?" These are just a few typical frantic questions which race through the head of a passenger devoid of orientation at a strange airport in a strange country.

Airport designers appear to give little thought to this need for prompt orientation for the deplaning passenger. Signs should be larger, and more plentiful, and cover more subjects. At airports where foreign passengers arrive and depart the signs should be in as many different languages as may be needed.

Such failures in airport design must be counteracted by the individual employees of the airlines, providing this prompt orientation to the passengers.

The anxiety generated at a strange airport is greatly magnified when the passenger learns that he is to be delayed because of "mechanical trouble." The increased voltage of anxiety can cause passengers to "blow their tops" as in the example at the beginning of this article, unless the airline is prompt and accurate and adequate in the full explanation to the passenger.

Even the words "mechanical trouble" which are used so frequently cause anxiety to intensify. It sounds so frightening . . . so indefinite. Passengers worry silently about what would have happened if the "trouble" had developed after they were in the air.

The airline which works out its internal administrative procedure so that it can take the initiative in telling passengers about a delay in **specific** terms, will deserve the increased public confidence it will earn. When passengers are told that they are being delayed until the **generator on number three engine** is in perfect working order, they gain the confidence of knowing that the airline **knows what the problem is.** This is in contrast to the anxiety of wondering if the airline knows what the trouble is when all it announced was that it was having **mechanical trouble.**

The Language of Symbolism

Communication with the unconscious anxiety-personalities of passengers has to be accomplished with the **language of symbolism.** This is a language with a depth beyond the reach of words and sentences and speeches.

Depth psychologists write a lot about such things as the "father image" as a controlling factor for the

THE PILOT'S A SYMBOL: "The Captain is a sort of 'Father Image' where passenger is incapable of controlling his own destiny."

anxiety-nature of mankind. It is interesting to find direct application for this "father image" in airline work.

Life is filled with anxiety for a young child. A barking dog . . . becoming lost in a crowd of strange people . . . interpersonal relations with other children which cannot be handled . . . inability to meet life's problems and predicaments . . . these are just a few of the many situations which cause anxiety to build up in a child, to the point of changing his whole personality.

The overpowering anxiety generated by the threat of a barking dog can cause the child to become completely irrational. His tears and panic can make it impossible for him even to talk with a stranger who would like to help.

But the mere appearance of the child's father on the scene causes specific changes in the child's behavior. The uncontrollable sobbing and crying dwindles and ceases. The child's panic evaporates. He again becomes a rational human being. All this can happen without the father's having spoken a word.

The father emerges as a symbol of relief from anxiety for children, when the parent-child relationships are healthy.

Symbol Functions of Captain

The role of the captain in relation to his passengers is quite parallel. The captain is a symbol, a sort of "father image" in a situation where the passenger is incapable of controlling his own destiny and anxiety.

This symbol-function of the captain is quite unrelated to the captain's own outer personality. The symbol function can be carried out successfully by a captain, no matter whether he is tall or short . . . handsome or drab . . . no matter whether he exudes charm or whether he feels uncomfortable while talking to strangers . . . no matter whether his voice is modulated or rasping . . . no matter whether the passengers ever see him or not.

The captain's **confidence** must come through all of these. His role is the responsibility for safety and the responsibility for orientation for the passengers.

At all times he must give the overall impression "I KNOW WHERE I AM. I KNOW WHAT I AM DOING. I KNOW WHAT IS UP AHEAD. I HAVE THINGS UNDER CONTROL. RELAX, AND LET ME BE CONCERNED WITH THE FLIGHT. I WILL KEEP YOU POSTED." This communication must come through to the passengers in the captain's own way. It makes no difference whether his grammar is flawless or whether he murders the language. The minute he is forced to try to read some set speech written by some brilliant "high-dome" in the general office, the whole vital spark is lost. He will not be convincing, reading someone else's wordage.

There are many channels for this communication from captain to passengers. Any one may be used. He may 1) talk over the public address system; 2) instruct a crew member to use the public address system relaying the message from the captain, in his name; 3) write a note to be passed among passengers, over his own signature; 4) walk through the passenger cabin personally, to tell the passengers; 5) instruct a member of the operating crew to talk to the passengers directly, relaying the message in the captain's name; 6) instruct the purser or stewardess to deliver the message in the captain's name, etc.

Other People's Use of the Symbol

Cabin crews and ground personnel should use this "father image" in their relations with passengers. To an anxious passenger, in mid-air, who feels lost, the purser or stewardess who ventures his own personal estimates is not supplying the needed symbol-assurance. Only the word of the captain contains the assurance needed to reduce anxiety to the fullest possible extent. The communication should come through to the passenger as "CAPTAIN KNOWLES ADVISES THAT WE WILL BE IN PARIS IN ABOUT AN HOUR, AND THAT THE SUN IS SHINING THERE."

Ground personnel also will find their conversations with passengers more effective if they can truthfully begin with "CAPTAIN WILFORD HAS ADVISED THAT HE WILL NOT TAKE OFF UNTIL THE GENERATOR IS IN PERFECT WORKING ORDER . . ."

The "Mother Image"

The stewardess plays an important parallel role of "mother image" in the same calming reassurance that a mother can bring to her children, when they are anxious.

An example from the official instructions of at least one airline tends to illustrate that this symbolism is a communication beyond the range of words. Whenever a sudden bumpiness, or a loud noise, or any other unusual incident occurs to arouse anxiety among passengers, this airline requires the stewardess 1) to pick up a magazine or pillow or other ordinary object, 2) walk the length of the cabin in a relaxed manner and do something of routine nature with the object, and then 3) return the length of the cabin to her original position. Not a word is spoken.

The effect on the mounting anxieties among the passengers is quite specific. They relax. The "mother image" shows no anxiety. Everything must be all right. This is the way a young child conditions its anxiety-reactions in relation to its mother.

This symbol-function can register effectively, no matter whether the stewardess is blond or brunet, short or tall, attractive or plain.

But it is possible for the captain and crew to overdo these programs of reducing passenger anxiety to the absolute minimum.

Anxiety Is a Force to be Used in Emergencies

In one recent example, the captain and crew needed passenger-anxiety, in an emergency, and it wasn't there!

It was necessary to make a landing when the captain knew in advance that one landing gear was defective. Although this type of landing can be made safely with some damage to be expected to the airplane, there remains, always, the possibility that there might be a fire after landing.

In this case the captain and crew did a superior job with the passengers, to relieve their anxieties. The captain explained the problem in detail to the passengers. The operating crew and cabin crew carried out their work with complete discipline, to prevent passenger anxieties from generating. All precautions were taken. The passengers were completely relaxed. They could even see the ground emergency crews lined up on the side of the runway, giving further confidence that all was well under control.

The landing was completed, with some minor damage to the airplane, although it rested at an awkward angle, making it necessary for the passengers to leave through an emergency door, step onto the wing, and down to the ground.

Then the captain suddenly wanted all passengers out, urgently, just in case a fire should break out. He called to the passengers to move rapidly to the emergency exit.

But the passengers did not move. Those who did get up, moved slowly. They were completely relaxed. Their anxieties were completely subdued.

When anxiety is absent, people won't move quickly or obey such commands! Throughout history it has been learned by dictators and politicians and mob leaders that a crowd can be molded and sparked into action upon command, when anxiety has been excited to a high pitch.

In certain rare cases, it is important to arouse passenger anxieties if the captain wants them conditioned to obey some sudden command like this.

The Universal Human Personality

When one has worked with the elusive anxieties of the travelling public, in this special "laboratory" in the form of an airplane cabin, for more than twenty years, he begins to realize that we in aviation are dealing with something very important.

We are dealing with a Universal Human Personality. Perhaps it is a universal or common personality trait. It is a set of predictable behavior patterns which emerge in all people of all races, colors, creeds, nationalities and conscious identifications, when they are in situations which stimulate and arouse fear and anxiety, and where normal fear-impulses are thwarted.

It is a personality controlled from physical or physiological forces which are beyond the scope of the so-called conscious mind, in which people learn different creeds and beliefs and identifications. It is not necessary to train a captain or stewardess to inquire as to a person's religious beliefs, or philosophic identifications, or political views, or nationality, in order to KNOW what his or her actions and reactions will be when fear and anxiety are aroused in flight.

The Common Man Is Common to All

Catholics, Protestants, Jews, Hindus, Buddhists, Republicans, Democrats, Socialists, Communists, Americans, Frenchmen, Finns, Venezuelans, Scholars, Philosophers, Statesmen, Illiterates, Truckdrivers, Housewives . . . and all other people . . . react from a common dynamic and controlling force when fear and anxiety have been aroused. The passenger lists of an international airline encompass all possible combinations of humanity, in almost any month. There are whole sets of **observable** behavior patterns which are common to them all, when placed in situations which arouse fear and anxiety, even in small and generally unconscious quantities.

We in aviation are dealing with common ground. We are learning to know and understand a truly universal personality . . . the personality of fear and anxiety. We are learning about universal human judgments of "good" and "bad."

Judgments of "Good" and "Bad"

We are learning that anxiety . . . unconscious anxiety . . . is a controlling factor in public reaction to air transportation. If public fear and anxiety should be intensified by a series of accidents involving a single airline, giving an impression of laxity in safety, that airline would be "bad" in public judgment. Any action which intensifies public anxiety earns the label of being "bad."

But the reverse is also true. Aviation has proven that the public will judge as "good" an industry which keeps public anxiety down to a minimum through continued dedication to safety. The evidence appears in the International Civil Aviation Organization's estimate that 45,000,000 passengers bought tickets on the scheduled airlines of the world in 1952 (excluding Russia and China).

Anxiety may remain dormant for years, but it does not die. Like a compressed spring its power will not be felt, unless it is released by carelessness within the air transport industry. If the industry should ever relax its continued dedication to Safety, public anxiety could be released with a power that could destroy the industry.

In the realm of public judgment, anything which intensifies anxiety is "bad." Any person intentionally committing an act which destroys safety is committing an "immoral" act.

Similarly, anything which eliminates anxiety is "good." Programs dedicated to Safety can deserve the "moral" support of all people of all races, colors, creeds and nationalities.

In here, somewhere, there is a clue to a universal principle of morality which can be shared by all people of all spiritual and philosophic beliefs. It is a characteristic of the Universal Human Personality.

(Continued on Page 12)

Air Line Pilots Association Federal Credit Union Financial and Statistical Report June 30, 1953

BALANCE SHEET

Assets

	June, 1953
Loans (627)	$373,861.18
Cash	107,255.97
U. S. Bonds	345,528.92
Furniture & Fixtures	2,629.96
Prepaid Expense & Misc.	232.95
Total	$829,508.98

Liabilities

Shares	$801,392.31
Reserve for Bad Loans	13,086.58
Undivided Profits	2,681.04
Profit	12,155.47
Accounts Payable	193.58
Total	$829,508.98

STATEMENT OF INCOME & EXPENSE

Income

	June, 1953
Interest on Loans	$ 3,652.52
Investment Income	2,435.09
Total	$ 6,087.61

Expenses

Salaries	$ 1,054.83
Office Expense	34.59
Educational Exp.	
Loan Insurance	274.90
Depreciation	62.72
Misc.	4.50
Total	$ 1,431.54
Net Profit	$ 4,656.07

Statistical Information

	June, 1953
Number of Members	2,343
Number of Potential Members	10,865
Loans made since Organization (Number)	2,367
Loans made since Organization (Amount)	$1,645,223.67

Morale and Safety Get a Boost

The PAA Pilots Test the CV-240 Under Increased Weight Loadings and Breath Easier. Capt. Lew Jack Here Reports Vividly on What the Group Found Out

By Capt. Lew Jack

We pilots have a natural concern as gross weights are increased. We have a further very real and natural concern when these are coupled with minimum runway length. There is no perfect operation. It is likely that we are all exposed to at least one or two marginal or "maximum performance" airports in both domestic and international operations.

Such was the concern of Pan American's Convair 240 pilots at Port-Au-Prince, Haiti when the aircraft's gross weight was increased from 41,790 to 42,500 pounds. This was evidenced through the author by written request to PAA for a demonstration of the aircraft's performance at Port-Au-Prince. Aspects to be considered were single engine continued flight as well as accelerate-stop from V_1 with further considerations to the weight, runway length, power available, wind, temperature, humidity, braking efficiency, flap setting and average pilot technique configuration.

Port-Au-Prince elevation is 35′, 715 statute miles from PAA's Miami base. There is one east-west runway, 4795 feet in length, having a variable slope which averages 1.45 per cent. Temperature conditions range from about 75° to 90° F. with an average 82° to 85° F. The airport is located about one-half mile from the seacoast with an average humidity resulting in an equivalent vapor pressure of about .8 inches.

Conditions Duplicated

In the discussions toward resolving this problem it was mutually agreed that representative demonstrations could be performed at Miami, which has similar temperature and humidity conditions with an increased safety factor due to Miami's 8100 feet of runway. Factors which vary between the two airports are slope, which we can interpret to a degree, a slight washboard effect impossible of interpretation, and wind. The wind at Port-Au-Prince is of the nature of a local phenomena in that it shifts from east to west at noon daily. There are periods when both direction and velocity vary around the compass to varying degrees at four different points of simultaneous observation.

With a temperature of 86° F., flaps at 17° for a wet takeoff, the gross weight varies with wind and slope to the following degrees. Slope is +1.45 for runway 9; —1.45 for 27.

Runway 9—40,650—with 6 knots headwind.
Runway 27—41,845—Zero wind.
Runway 27—40,368—with 5 knots tailwind.
Runway 27—42,435—with 8 knots headwind. (Max. allowable).

Note: Turn-around wind=6 knots.

PAA dispatched its very capable Mr. Henry Millon to Port-Au-Prince to survey the airport. Mr. Millon then reproduced the conditions there existent at Miami regarding runway length, obstructions, etc. A 240 was made available for the demonstration for the morning of 25 June '53.

Four Observation Stations

It was agreed to use takeoff weight for Runway 27, zero wind, 86° F. oat. 17° takeoff flap for 41,800 pounds. A first takeoff was made to establish a zero-thrust RPM on the No. 1 critical engine. Zero thrust rather than actual feathering was used for obvious safety reasons. Pilots manned observation points established along the runway at points of V_2, 50 ft. height point, critical obstruction height point, and at the end of the runway.

These stations were chosen from CAA manual performance curves taking into account the length and slope of the runway and distance to the critical obstruction at Port-Au-Prince which is a tree 28 feet high 110 feet from the end of the runway. Observers estimated the aircraft's height at

PAA CV-240 TEST GROUP: Rear (l. to r.) J. A. Long, R. Morrisey, B. Bryant, H. Coe, G. Paul (PAA Engineer), R. Vinol (PAA Engineering pilot), G. Lappla, P. Weston, R. Milliken, and H. Millon. Front (l. to r.) B. Rooker, L. Loomis, R. McMurray, F. Gillespie, Lew Jack, Ted Linnert, ALPA Engineering staff, and A. Dinsmore.

each station and pictures were taken for each takeoff at each station.

Mr. Millon took his pictures with a calibrated Polaroid camera at the critical obstruction station. This camera was set up 500 feet from the runway center line and at a right angle to it. By overlaying a grid calibrated in degrees on the finished photograph the angle between the aircraft and the runway was determined. The horizontal distance from the camera to the aircraft multiplied by the tangent of the angle gave the height of the aircraft accurately.

Four Takeoffs Made

Four takeoff simulated failures at zero thrust at V_1 were made. This condition was maintained to station 4 after which both engines were used.

4. Aircraft was a "line" aircraft. It returned to Miami the previous evening with 3 or 4 items of a minor nature.

5. Tires on the aircraft were not all new but were representative with good tread. The two right tires were "mixed" in that there was one almost new tire inboard and one that appeared about halfway through its normal life prior to recapping. This latter tire blew on the second accelerate-stop due probably to the difference in size between the two tires braking on a slightly wet runway.

6. The No. 2 operative engine, developing indicated power as in 2 above, was close to overhaul time with 1093 hours since overhaul.

7. The aircraft, 90673, was flown by Capt. Dick Vinal, PAA's Latin formance. Photographs at station 2 and 3 are reasonably accurate in interpretation of height. Station 4 photos do not show height clearly with the accuracy desired. The first two runs were noted to be some 200 to 300 RPM above zero thrust on the "dead" engine. The last two takeoffs were with zero thrust. A comparison of the four indicates an almost immeasurable quantity difference.

2. Accelerate-stop Manual Distance above is corrected distance for temperature at the weight and wind and is based upon the use of brakes only. The actual stopping distance was with the use of brakes and full reversing on one engine. It should be noted that attempt at accelerate-stop was with the understanding that damage to the

DEMONSTRATION FLIGHTS TAKE-OFF TABULATION

Take-off—Simulated engine failure at V_1

 # 1 engine inoperative at V_1 = 111 kts. IAS) — 17° T.O. Flap

					Sta. No. 1	Sta. No. 2		Sta. No. 3			Sta. No. 4	
						Height at Zero Wind Minimum Runway Length of 4500 Ft.		Height at Critical Obstruction Distances 5420 Ft.			Height at End of Runway 8100 Ft.	
									Actual Height			
Run No.	Weight Lbs.	Wind Comp. M.P.H.	Temp.	Humidity (V. P.)	Obs. Dist. to V_2	Manual Height	Height (3) Ave. of Estimates	Manual Height	Ave. of Estimates	Grid Camera	Manual Height	Ave. of (3) Estimates
1	41,800	6	83° F.	.8	3010	55	68 (59)	.87	113	105.9	180	400 (275)
2	41,650	6	83° F.	.8	2880	63	60 (67)	110	123	125.8	200	400 (255)
3	41,800	5	86° F.	.8	2840	55	48 (56.3)	87	133	106	180	350 (200)
4	41,650	9	86° F.	.8	2795	70	73 (65.5)	115	135	133	205	350 (262)

Accelerate and Stop

Accelerate to V_1 — 111 kts. IAS, full reverse on No. 2 engine and maximum braking applied.

Run No.	Weight Lbs.	Wind Comp. M.P.H.	Temp.	Humidity (V. P.)	Actual Demo. Configuration Manual Dist. Allowed	Actual Stopping Distance	Remarks
5	41,500	11	86° F.	.8	4200	3750	Dry runway
6	41,500	10	86° F.	.8	4220	3770	Started raining Blew rt. outboard tire

NOTE: Figures in parentheses indicate heights determined by scaling the photographs of the actual take-offs taken by the observers at their respective stations.

Two accelerate-stop runs were then made. Brakes and full reverse was used on one engine after reaching V_1. There follows the demonstration results.

1. V_1=V_2 with corrections applied. Lift-off V_2, average 4 runs was 113 knots indicated by Capt's A/S. 1st officer's A/S indicated 3 knots lower.

2. Power configuration with atmospheric corrections applied indicated average 228/230 BMEP or about 2280 H.P.

3. Aircraft not weighed for demonstration. PAA's weight control program is considered adequate.

American Division Technical Chief Pilot with a regular line First Officer, Jim Long, as copilot. Observing were ALPA's Ted Linnert and the Author.

8. Ground observations were under the direction of Capt. Vinal's able right hand, Operations Engineer Grady Paul.

9. All six takeoff starts were "jackrabbit" type.

Conclusions

In summary, the demonstration points up these items of note:

1. Takeoff runs of continued flight compare favorably with required per-

aircraft through a test run "using any means" to stop would be avoided. It seems fair, however, to assume from this demonstration that reversing is a must. No attempt to stop with brakes or reversing alone was attempted. PAA has established the requirement of operative reverse at maximum performance airports.

3. All concerned should be impressed with the importance of properly operating reversing.

4. At this particular airport the accelerate-stop, no wind, would lengthen the actual distance. Slope will then shorten the distance to V_1. However,

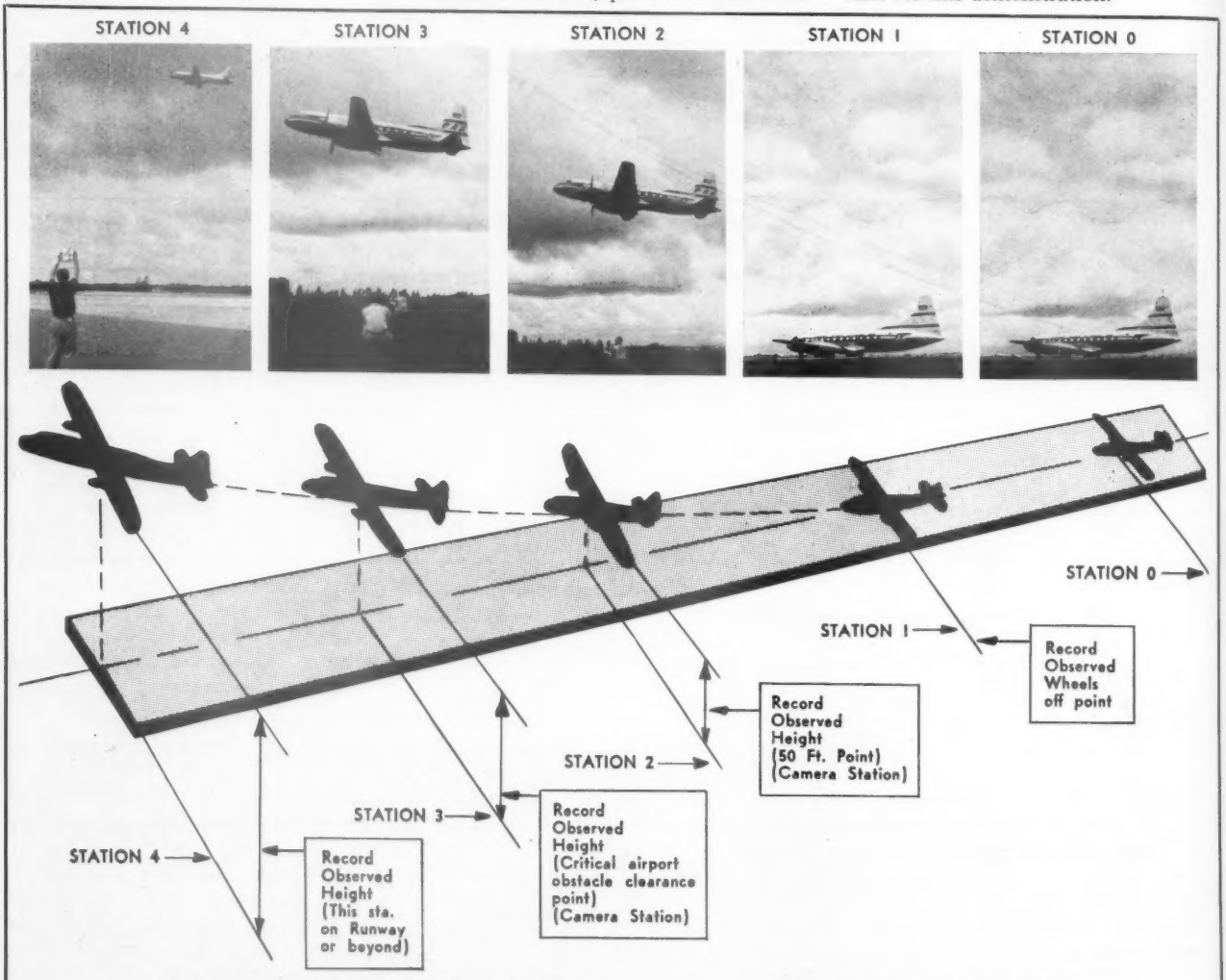
slope again will lengthen the stop distance. We then approach the allowable distance when the weight, which was calculated here, is up to maximum allowable.

5. A maintenance of power philosophy must be accepted and, in fact, stressed for a proper maintenance of performance. This would appear to be mandatory upon all concerned. PAA has established this requirement for its 240 engines.

6. At maximum performance airports there is no time for lost motion. (Don't all holler at once, fellows.)

In conclusion and at the risk of being labeled "corny" or "emotional" I say, in all earnestness, that morale and safety go hand in hand and finally are reflected in hidden yet increased operating costs when satisfaction to a problem is not forthcoming. Pilots are men—not boys; interested in reasonable solutions to their primary safety considerations. Further, pilots are men—not mice; when a concern is felt, answers must be made available through information of one sort or another. Needless to say, it is held that the company's good health was improved through the medication of information which increased confidence and thus both morale and safety. The industry can stand more of the same.

With no further ado, thanks to PAA's LAD Operations Manager, Capt. O. J. Studeman, and his able staff for this demonstration.



ALPA PROCEDURE FOR OBTAINING ON-THE-LINE-PERFORMANCE DATA UNDER ADVERSE OPERATING CONDITIONS

Select a hot, humid day; an airplane taken right off schedule with high engine time and airframe service abuse. Start a take-off, make one engine inoperative at V_1 airspeed, roll along runway to V_2 airspeed and record Station 1 wheels off distance; record height observed and take a still picture at Station 2; record height observed and a take a still picture at Station 3; record height observed and take a still picture at Station 4. Equipment and personnel: 2 pilots, 2 observers taking data in the airplane, a minimum of 3 observers at each station, plus 2 cameras at each station 2, 3, and 4. Set up stations from flight manual information. Obtain weather data. Flying time requires about one hour for 4 take-offs. Results: a realistic evaluation of performance that can be applied to airline-wide conditions. (The above pictures are the results of the ALPA-PAA CV-240 take-off demonstrations, run No. 4.)

Toward Pilot Financial Security

The head of ALPA's Research Department outlines the three-fold program leading toward the financial security air line pilots need

By R. L. Oakman

A former spokesman for ALPA once said, "One thing about being patient is that it takes longer." Now, this, of course, is no startling revelation, yet in essence it is true. It is likewise true that the more democratic an organization is the more patient its members must be. For it is well-known that there is no more fumbling, tedious, seemingly expensive process than the democratic one. It moves ahead slowly, hedged in by compromise and tradition. Its ultimate product is temporized, altered, and manipulated from all sides by alternate viewpoints vociferously expressed and though in this manner we "make haste slowly" the outcome has always been thoroughly explored from any and all aspects and can, therefore, be more easily accepted by a group and likewise more quickly consolidated as a real gain.

ANOTHER ASPECT OF PILOT SECURITY: The ALPA Insurance Committee meets at the Home Office to study loss-of-license coverage. L. to R.: G. T. Henderson, UAL; H. G. Thompson, NWA; Clyde Proper, AA, Chairman; President Sayen; R. L. Oakman, ALPA Research Dept.; S. Devine, UAL.

Credit Union

The Air Line Pilots Association Credit Union, the first step in what might be called an ALPA Financial Security Program, illustrates the type of slow but thorough progress which comes in the democratic manner. Finally launched, after long consideration, in February of 1948, it has slowly but surely taken shape over the years to a point where it now has over 2,300 shareholders with deposits in excess of $800,000. It has loaned $1,645,000 in its relatively brief existence and paid out close to $50,000 as dividends to its shareholders. It is a successful, well-established business, in a very real sense, organized by air line pilots, utilizing pilot savings to expand pilot credit requirements in time of emergency—a very useful economic tool. True, some say its interest rates on loans are too high and on savings too low and some say just the opposite (depending on whether they borrowers or lenders be) but rest assured it will pursue a steady, gradual course of adjustment rather than an erratic gyrating one due to the democratic foundation on which it is built and through it the pilot shareholders—pilot directors—pilot borrowers are finding out how the world of finance can operate to their own mutual advantage.

Mutual Aid

On June 8 the first meeting of the Board of Directors of the ALPA Mutual Aid Association convened and launched what can be considered a second step toward financial security. This Mutual Aid Association is being surprisingly well received but here, too, the slow tedious method of democratic group action has exercised its control and a gradual growth in participation can be expected. Having learned the basic lesson of mutual financing from credit union activities the pilots, through mutual aid, are now insuring themselves against accident and sickness—again by pooling their own resources, this time to obtain the most economical and all embracing accident and health insurance available anywhere.

Carefully and arduously woven, with consideration of existing pilot working agreements and working conditions, this Mutual Aid plan has been custom built to the needs of pilots. No other such insurance can be purchased and if it could, its costs would be very high. Briefly this Mutual Aid plan will—at actual cost—provide a pilot with an income of $250 or $500 a month for any and all protracted absences from flying due to physical disability up to a maximum of one year. As said before, this protection will be provided at cost and naturally the better the participation in this plan becomes the lower the cost will be. As its reputation and capabilities become better known to the members, it will be shown to be a tremendous step forward.

HAVE YOU MAILED YOUR MUTUAL AID APPLICATION YET?

Take advantage of this opportunity for income protection today. Mail your application to:

ALPA Mutual Aid Association
55th Street & Cicero Avenue
Chicago 38, Illinois

MEET YOUR VICE-PRESIDENTS

Newly-elected Regional Vice-President for Region I, Capt. W. M. Masland, PAA, brings to his office a wealth of background in air line pilot affairs.

Capt. Masland's long history of service to ALPA is highlighted by the eleven consecutive years in which he held elective offices in his local council. During this time he served four terms as Council Chairman.

On numerous occasions he has appeared for ALPA before Senate and CAB committees on matters of general air line pilot concern. He was an ALPA representative to the recent convention of the International Federation of Air Line Pilots Associations. He has represented this organization in both London and Washington and is currently serving on several IFALPA committees.

Born April 8, 1907 in Philadelphia, Capt. Masland soloed at Pitcairn Field in 1938, completing a quarter-century of flying in July of this year. He was a Navy carrier-based pilot, barnstormer, and has been with PAA since 1935.

Masland's present home is Plandome, Long Island, but he has been based in San Francisco, Miami, Port of Spain, Rio, and New York. He is married and has three children, the oldest of whom was born in July, 1937, while he was making his first North Atlantic flight, enroute Ireland and England.

A third step toward pilot financial security is now about to be taken. The Mutual Aid Association protects earnings for only one year after sick leave expires (14 months total), and there are some cases where the need for protection extends over a longer period. In some few cases, pilots must leave flying forever as a profession and take up other lines of endeavor due to the loss of their medical certificate for physical reasons. Thus, another tailor made type of insurance is needed—a policy which will safeguard pilots' income for a longer period than the one year provided so that a pilot forced to adjust himself in a new profession may bridge the earning gap usually confronted on such occasions. A policy has been devised which will pay a pilot deprived of his flying income an amount of $500 per month for an additional 34 months or a total of four years (two months company sick leave, 12 months Mutual Aid, 34 months loss of license insurance) and due to the assistance already provided by the Mutual Aid coverage, the cost of such a policy will be so nominal that all pilots not only can afford it but cannot afford to be without it.

Knee-deep in democracy as it is, the Air Line Pilots Association is producing long-awaited progress towards the goal of financial security desired by all—the giant has taken another mighty step toward solid ground and with each step momentum is being gained—confidence and knowledge, indicating that the members do have the ability to handle mutually profitable financial activities themselves through their Association is gradually accumulating and spreading. As greater understanding and participation in these Association-wide moves toward financial independency grows, future savings in this field will be practically without limit.

The Common Man Up in the Air

(Continued from Page 7)

When anxiety is absent, each person's personality and actions are controlled differently by his or her conscious mind. Each goes his own way in his own beliefs and toward his own conscious objectives. We in the airline industry do not know these millions of different personalities which travel our lines. It is not our business or concern to pry into their private personalities and lives.

But when fear and anxiety have been aroused, a personality emerges which is common to all people. It is our opportunity and our responsibility to become intimately familiar with this common or universal human personality.

As we continue to study and reflect upon it, I believe that we will begin to realize that we are becoming acquainted with essential facts of life . . . with principles which will be applicable on much wider scales to help understand the world's crises which

FIRST TIME AT HOME OFFICE: The PAA Master Executive Council pictured as they met for the first time at the new building on July 13, 14 and 15. The discussion topic: problems arising from furloughing and future company plans.

are pyramiding international fears and anxieties close to the point of another explosion . . . with principles which can help us to understand the universal motivations and incentives of all people in all different civilizations in their unconscious, wordless, mysterious, thwarted striving for the objective of Safety . . . for escape from anxiety.

The physical aspects of Safety can be attained only by continuous, relentless, dedicated work and thought to eliminate every possible cause of anxiety, whether this be an accomplishment of a vast and complex international scheduled air transport industry . . . or whether, some day, it be the accomplishment of a world organization dedicated to the worldwide policy of Safety, for all mankind.

Absence-of-anxiety is also the basic, wordless, instinctive, groping hope and desire of all peoples in all civilizations and in all stages of history. This objective of Safety is a common ground for humanity; and for aviation, it spells complete success.

ICAO Sees Safety in Light Standardization

Standardization of approach lights and installation of high-power approach lights where they are lacking will greatly aid in the promotion of air safety, the International Civil Air Organization points out in a summary of Civil Aviation for the past year. Writing in the ICAO Bulletin, Dr. Edward Warner, President of the ICAO Council, states:

"The completion of a standard specification for approach lighting for airports was a 1952 accomplishment. Ever since PICAO's first meeting on aerodromes and their marking and lighting systems in 1945, the arrangement of approach lights to lead the pilot visually through the last stage of his approach to landing had been vigorously contended by the advocates of alternative arrangements.

Single Row Support

Expert opinion—especially that of airline pilots—had gradually swung to one of the alternatives *(ALPA Center-Line System)*.

"The standardization of approach lights should be of great help in further improving safety and reliability records. High-power approach lights have been lacking at many airports where they were badly needed. Standardization out to remove a major obstacle to action in many such cases."

LAMENT TO LINDBERGH

It is simply staggering to the imagination to read the colorful account of Colonel Chas. A. Lindbergh's epic flight in 1927 from New York to Paris (which recently appeared in serial form in the Saturday Evening Post) when we examine it in the light of today's accepted minimum standards of operation for an over-water flight of 3600 miles.

Ever since that memorable afternoon when the embryo NBC radio network brought us the momentous news that Lindy was circling LeBourget Airport in Paris, while the French gendarmes struggled desperately to clear the landing area of unruly hordes of people, all gone hysterically mad over the boyish aviator from America, who had accomplished what their own fliers had been unable to do, he has been a hero to millions. It was truly a stupendous undertaking, fraught with a thousand dangers—and with little chance for success, if we dismiss sentimentality and appraise it soberly.

When we consider the limitations of existing airports—most of them only glorified pastures, the meager and inaccurate weather reports to which he had access, the non-existence of any blind flight instruments except an early turn-and-bank indicator, the superhuman feat of staying awake 60 hours, we need not even proceed to the frailties of the primitive airplane itself to recognize Lindbergh's feat as the luckiest flight in all aviation history.

It is a presumptious pen which would detract from Lindbergh's stature. I have idolized him since boyhood; a model of the Spirit of St. Louis graced a pole in the middle of our lawn at home within a week after his history-making flight, its scale done by estimate from newspaper photographs. It was still there when I left home years later, having successfully resisted the ravages of the elements as its famous counterpart had done.

But we must admit his chances for success were infinitesimal indeed when compared to Commander Richard E. Byrd's elaborate preparations for the same flight. Byrd had a tri-motor Fokker, furnished by a wealthy sponsor who was sparing no expense to insure the success of the flight. He had a full crew, including a navigator, as well as radio equipment. Lindbergh had none of these, yet he succeeded while Byrd failed, the hapless Navy officer and his crew barely escaping with their lives when they were forced to ditch the Fokker in the surf off the French coast because of bad weather. One flight had good luck; the other was plagued with bad luck. Fame is fickle, and more often than not it hinges largely on luck.

If you would doubt this, read the details of Lindy's sudden decision to attempt the flight; the feverish searching about the country for an airplane once the "considerable" sum of $15,000 had been raised; the almost casual approach to the necessary redesign of a current Ryan model (the designer, with noteworthy alacrity, added five feet to each wing, pushed the engine forward and the tail back, but dispensed with the desirable enlargement of the tail group at Lindbergh's insistence that it could be sacrificed in the interest of quicker completion); a lady's compact made into a rear-view mirror to watch the earth inductor compass, and stuck in position with a wad of gum; the absence of a full load test flight. Indeed, the engine did not even have a carburetor heater installed at the factory in San Diego, and Lindbergh almost came to grief in Arizona at night while he was ferrying the ship to New York!

But the naivete which the young pilot displayed throughout his preparations was only exceeded by his desultory thinking about the flight. He

(Continued on Next Page)

writes, even in his frantic haste to take off first, he mapped a course across the Pacific to Asia, should somebody beat him in the race to Paris. He considered putting clumsy pontoons on his ship. He admits that he did not even know whether he would take off when he climbed into the cockpit that dark, misty morning in May at Roosevelt Field. Once in the air and approaching what he feared was zero weather over New England, he came to another strange decision. He writes he "must not be disappointed; I never counted on making Paris the first time anyway"; and if the weather proved too bad to get through, he "would return and circle New York in an attempt to break the endurance record." Once the weather did get better (ceiling 4000 feet), he performed an utterly incomprehensible act by *dropping down to less than six feet above the ocean, where he flew for miles, looking ahead through a periscope, until fear of flying into the rigging of a ship caused him to desist.*

What kind of thinking and flying was this? His vacillation is amazing, his willingness to flirt with disaster incredible for our greatest aviation hero. His diffidence, dragging against the youthful and blind faith of the tyro, comprise a strange combination, virtually unknown in a pioneer.

Lindy has converted me to the belief that the real tribute belongs to the Wright people, who built the faithful J-5 Whirlwind. Clarence Chamberlin duplicated Lindy's feat a month later with a J-5 Bellanca. And I can find little real difference between Lindy's pseudo-scientific flight and that of "Wrong Way" Corrigan's acknowledged stunt flight to Ireland in a J-5 Curtiss Robin a few years later which earned Corrigan no acclaim; only the jeers and criticisms of an amused world were the reckless Irishman's reward.

Something unpleasant happened to me as Lindy's story unfolded. After all these years of idolizing the man, cherishing my adolescent dreams of his prescience and his prowess—which I always considered second to no man—and now, at this late date, he comes along and deals them a damaging body blow from which I realize there can be no recovery. By his own hand he has pulled from beneath himself the venerated pedestal upon which I would have kept him enshrined. He has dashed away by his own word all the beautiful illusions which I have treasured so long, leaving in their stead a sudden realization in all its appalling and unwelcome truth.

His was the greatest stunt flight in history—a photo finish with fame!

But even though the Lindbergh myth is ended for me and the Lone Eagle's star paled to secondary magnitude, I can never forget that it was he who awakened America and the world to the limitless possibilities of the wings of air commerce. We stand today as the unchallenged leader in commercial aviation, largely because he shook us from our lethargy before some other nation stole the show. That it took a sleepy Minnesota country boy in a rickety flying machine and the riskiest of all daredevil flights to do it, merely points up signs of the times. That's the way things were done in the roaring twenties.

History records other famous risks by intrepid men. Lindbergh now takes his place alongside Christopher Columbus, another pioneer who was pronounced a fool by the multitudes for his daring in sailing into the uncharted wastes which were to be conquered by another medium some four centuries later. Nobody today remembers Columbus for his foolhardiness. It is for his discovery of the New World that his memory is destined for immortality as long as men write history in books. Lindbergh will rank right alongside—not for how he did it, but for what he did. History is merciful and it is the end result which counts.

THEY FLEW IT: Yesteryears of airline flying were fondly recalled by this threesome at recent dinner in San Francisco, honoring 24 employees on the occasion of their 25th year with United Air Lines. Shown (from left) are Capt. Harold Little; W. A. Patterson, president of United, and Capt. James Johnson. Model plane is a Ford tri-motored plane of the type Little and Johnson piloted in 1930.

ALPA Mutual Aid Assn. Developments Reported

Beginning with this issue, the AIR LINE PILOT will report monthly on the growth and development of ALPA's new service organization, the ALPA MUTUAL AID ASSOCIATION. Below is the first such financial and membership report:

AIR LINE PILOTS ASSOCIATION
MUTUAL AID ASSOCIATION

BALANCE SHEET
JUNE 30, 1953

Assets

Cash	$20,500.00
Total Assets	$20,500.00

Liabilities

Members' Deposits	$20,500.00
Total Liabilities	$20,500.00

STATISTICAL INFORMATION
JUNE 30, 1953

Number of Members	478

Please note that the reported development covers the period up to June 30. Since that time an additional 135 applicants have been approved for membership, and the Mutual Aid office reports that there are approximately 100 applicants now on hand awaiting approval by the Mutual Aid Association Board of Directors.

HONOR RETIRING PILOTS: Captains Amos Collins and Jack Walsh, Council 4 TWA, are honored upon their retirement from air line flying after a quarter century in the cockpit. Both had perfect safety records throughout their careers during which they logged 28,000 hours and 8,000,000 miles. Standing at rear of picture, L to R. are: Capt. Ted Moffitt; LaMotte Cohu, Chairman of Board, Consolidated Vultee; Capt. Collins; Capt. Ken Woolsey, Chairman Council 4; Capt. Walsh; and Captain P. S. Fredrickson, Dir. of Flight Operations, TWA. Carl Peternell, ALPA Regional V.P., is at extreme left of picture. Other TWA employees were also present.

Improved Runway Markings

Improved runway marking providing for less expensive installations at the majority of airports and more elaborate patterns for very large airports with dense traffic has been developed by the Civil Aeronautics Administration as the new national civil standard, F. B. Lee, CAA Administrator, has announced.

The markings are a refinement and elaboration of established principles which have grown out of recent experience with visual landing aids provided for pilots. They help guide the pilot on final approach to the runway and provide him with bold markings on the runway during the critical seconds when he "leaves" the electronic landing aids and "goes visual."

The improved marking system is established in Technical Standard Order TSO-N10a which recommends its installation for safer and more efficient aircraft operations. An important feature of the new system is the establishment of three basic patterns of marking, enabling an airport operator to use only the minimum type of marking needed to suit the kind of operation on his airport. The old standard for runway marking provided for only one pattern, too elaborate and expensive for small airports and not adequate for very large airports handling heavy traffic under low weather minimums.

Thus the majority of airport operators in the U. S. will be able to install runway marking most directly suited to their airports at a substantial reduction in cost over the old standard, according to F. B. Lee.

The more elaborate of the three types of marking is for the all-weather runways on airports with high density traffic where the markings are more extensive and bolder, giving additional information needed by the pilot making an approach under low weather minimums. The character and quantity of the marking are scaled down from the all-weather runway to the "basic instrument runway" and then to the visual flight rule (VFR) runway where necessary markings have been reduced to a minimum. On this VFR runway, the new centerline, which is dashed, instead of solid, requires less than one-half the paint formerly used for this element. Where the old standard required four solid continuous lines down the entire length of the runway, the new centerline is a single dashed line, similar to traffic lines on our city streets. Another feature of the dashed line is that it gives the pilot an indication of his speed, a critical element in landing and takeoff.

Lines on runways are white and on taxiways, yellow.

The new system has been proved in actual service. It has been in use at LaGuardia Field, New York, for two years, where some 50,000 landings have been made. A similar system is in use at Newark. The Air Line Pilots Association, the Airports Advisory Committee and the Air Transport Association have endorsed the new markings.

The new marking system was proposed by the U. S. at the International Civil Aviation Organization (ICAO) meeting in Montreal last November as the new world-wide standard for runway and taxiway marking. Agreement was reached with the majority of nations represented and it is expected that the new runway marking patterns will begin to appear on large air terminals around the world.

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